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September 28, 1979

THE ESTUARINE STUDY

VOLUME 2

USE APPENDIX

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Prepared for: New Jersey Department of Environmental
Protection
Division of Coastal Resources
Bureau of Coastal Planning and Development
Labor & Industry Building
PO Box 1889
Trenton, New Jersey 08625

Contract A97146

This report was prepared in part with financial assistance from the
United States Department of Commerce
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management
under the provisions of Section 305 of the Coastal Zone Management
Act of 1972 (Public Law 92-583, as amended).

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

HT 393, NS E885 1979 V.2 C.2

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USES

Human utilization of water and land resources was classified into 103 uses, on the basis of distinctions in cultural processes and resource utilization (Table 1). The use classification is composed of nine primary categories:

- Housing
- Commercial uses
- Institutional/professional uses
- Industrial uses
- Energy generation
- Recreation
- Public facilities
- Transportation
- Natural resource utilization

Due to the similarity of many of the industrial uses, not all industrial uses are depicted individually. All but six of the remaining uses are illustrated on the following pages. Additional information concerning the sizes and the various uses is given in Volume 3, Table 4 - Standard Magnitudes of Uses and in captions where necessary.

The photographs were taken especially for this report during 1978 by Mr. John Munro, JMA staff photographer.

Housing

The housing category consists of four uses based on density (the number of units per acre) and the type of structure. Rural housing is one or fewer dwelling units per acre (du/a). Single family detached housing is more than one but fewer than six du/a; single family attached, is 6 to 15 du/a; and urban high density, is more than 15 du/a.

Commercial Uses

The commercial category consists of two uses -- wholesale and distribution, and retail and service, adapted from the standard industrial classification (SIC) of the US Department of Commerce. Wholesale and distribution trade consists of the stocking of durable goods, such as vehicles, furnishings, and machinery, and non-durable goods, such as paper products, apparel, and groceries for stores and dealers.

Retail trade consists of the sale of building materials, general merchandise (such as department stores), food, automobiles, apparel furnishings, and restaurants to the general public. Service involves the exchange of nontangible commodities and personal services. Personal services include laundry, cleaning, and repairs.

Institutional/Professional

Institutional facilities include educational, cultural (museums, theaters, galleries), civic, religious, community, health, social, and government types of uses. Professional facilities including banking, insurance, real estate, advertising, employment counseling, legal, and consultant businesses.

Industrial

The industrial category includes the extraction of geologic resources, the transfer of raw materials, and the manufacturing and storage of goods. Industrial manufacturing is broken down into twelve subcategories ranging from fabrication and assembly to petroleum and petroleum products. Included under the industrial category are 58 specific uses types.

Extraction consists of uses concerned with stone, gravel, sand, clay, and mineral ore extraction. Actual drilling to extract oil and gas is not anticipated within the 3-mile limit of the State's territorial sea. Oil and gas extraction outside of the coastal zone jurisdiction on the outer continental shelf, however, would necessitate movement of the oil and gas into the coastal zone for refining. The transfer of oil products is a specific industrial use, as is the refining of petroleum products.

Energy Generation

Energy generation is divided into two subcategories (fossil and nuclear) based on the type of fuel used. The subcategories are broken into three specific uses each, differentiating between the types of cooling systems used in the power plants.

Recreation

Recreational uses were subcategorized first by the attendance attracted by the use and then subdivided into indoor or outdoor uses. Examples of these uses include amusement parks, sports stadiums, picnic areas, campgrounds, parks bathing areas, and playing fields.

Public Facilities

Public facilities uses are subdivided into centralized water supply, centralized sewage, and three types of solid waste disposal uses. (Individual water supply systems and solid waste disposal systems are considered part of the specific uses within which they are associated, such as rural housing.)

Transportation

Four modes of transportation form the subcategories of this grouping. Automobile transportation includes roadways of three capacity classes. Expressways generally have at least four traffic lanes with a physical separation between the direction lanes. They also have limited access, and the traffic is free-flowing (no traffic signals). Collector roads also may have barriers to separate traffic, but they have less restricted access and may be signalized at widely spaced, major intersections. Local roads have two to four or more traffic lanes. These roads have unlimited access, and signals typically control important intersections.

Few proposals for major new projects associated with rail transportation are likely to be presented during the next decade. Interconnections between existing rail lines may be considered, and the installation of short spur lines to provide freight service to new facilities may be planned. New stations also may be required to provide passenger service for commuters at sites near population centers that have developed in suburban areas.

Water transportation includes facilities associated both with ships and with pleasure boats. The term "port" is intended to include a new industrial use, such as a container cargo operation, that may be proposed for a site that is accessible from the water by a deep, navigable channel. A marina is a facility for use by pleasure boats that generally have a draft of less than 8 feet. A dock is a small or medium sized boat mooring site, and docks often are associated with residential homes along waterways. Docks may also be associated with larger individual vessels such as ferries.

Aircraft transportation includes operations related to commercial carriers, general aviation, and special uses (such as private runways, crop dusting, seaplanes, and helipads). Airports and small landing fields are the uses considered. Small landing fields may have either paved or grass runways.

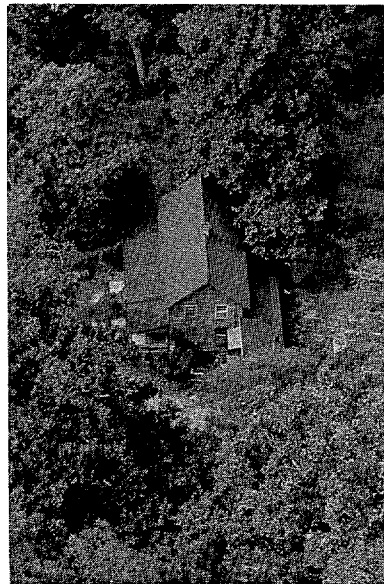
Natural Resource Utilization

Natural resource utilization is the category of uses which manipulate or harvest natural resources. These include the subcategories of shellfishing, fishing, aquaculture, forestry, agriculture, and mosquito control ditching. Shellfishing and fishing are further subdivided into commercial and recreational uses. Agriculture is subdivided into six uses: row crops, salt hay, nurseries, orchards, lot rearing of livestock, and range rearing of livestock.

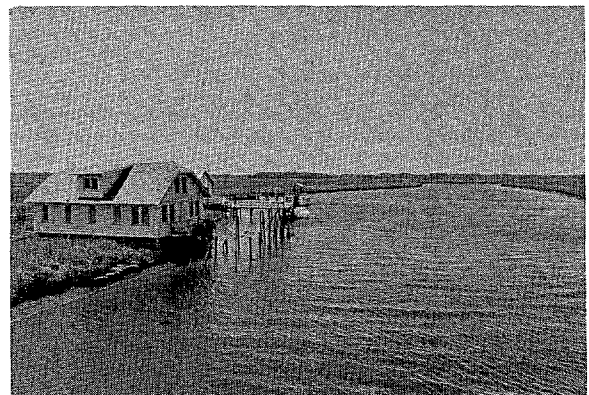
IMPACTING ACTIVITIES

Impacting activities associated with the above uses are depicted in photographs 105 through 143, with the exception of plowing/disking, fertilizing, insecticiding, herbiciding, and subsurface water demand. Included within each caption is a brief discussion of how the impacting activity is used.

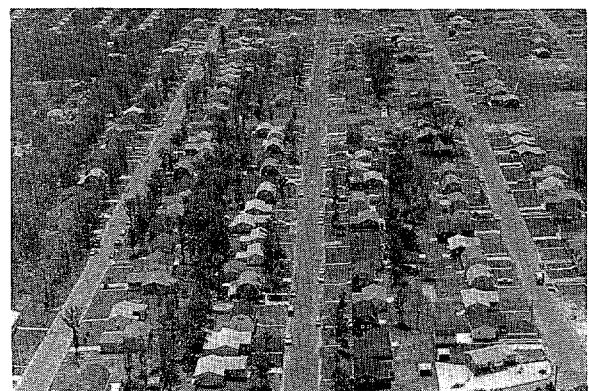
Photograph 1. Rural housing, Burlington County. One or fewer dwelling units per acre.



Photograph 2. Rural housing on structural support, Nacote Creek, Atlantic County.

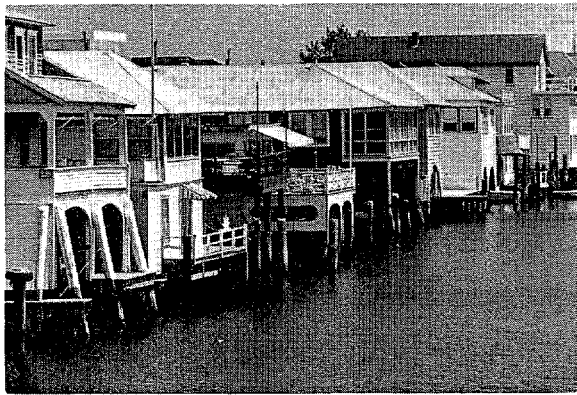


Photograph 3. Single family detached housing, Lower Township, Cape May County. More than one but fewer than six dwelling units per acre.

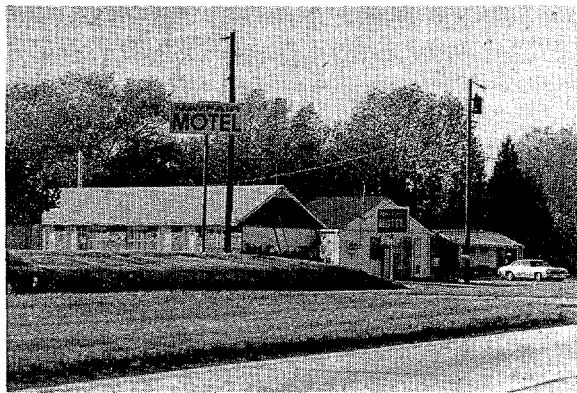




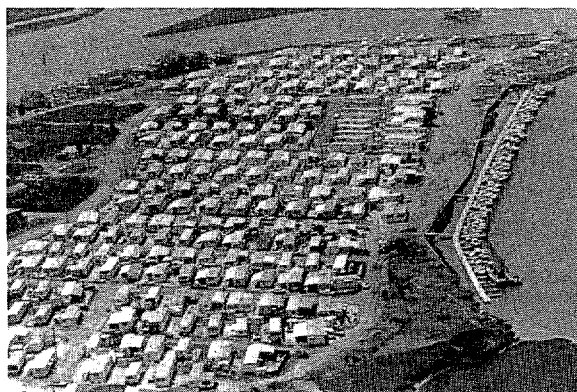
Photograph 4. Single family attached housing, Secaucus, Hudson County. Six to fifteen dwelling units per acre.



Photograph 5. Single family attached housing, Ventnor, Atlantic County.



Photograph 6. Single family attached housing, motel, Washington Township, Gloucester County.

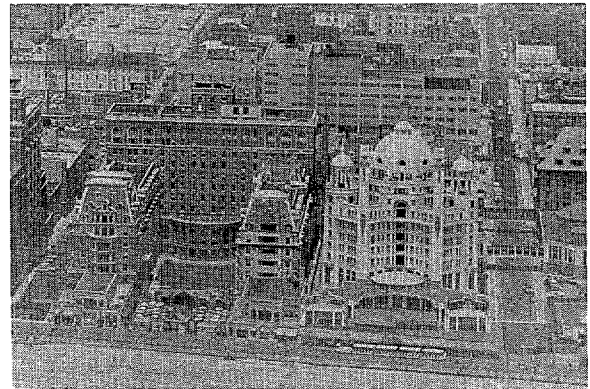


Photograph 7. Urban high density housing, mobile homes, Shawcrest, Lower Township, Cape May County.

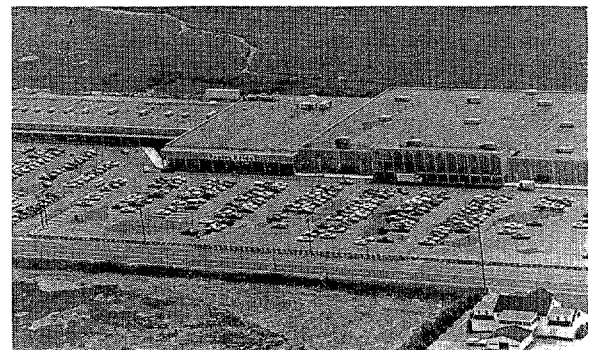
Photograph 8. Urban high density housing, Longport, Atlantic County. More than fifteen dwelling units per acre.



Photograph 9. Urban high density housing, hotels, Atlantic City, Atlantic County.



Photograph 10. Retail trade, Ventnor Heights, Atlantic County.

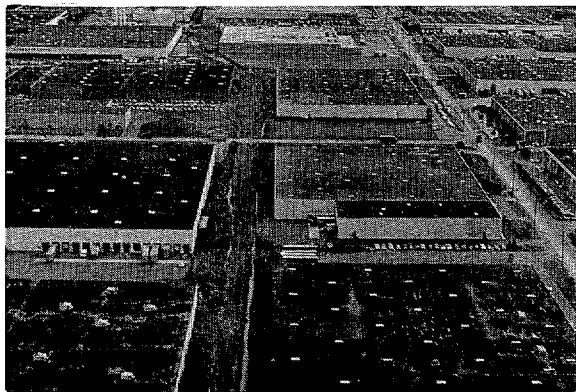




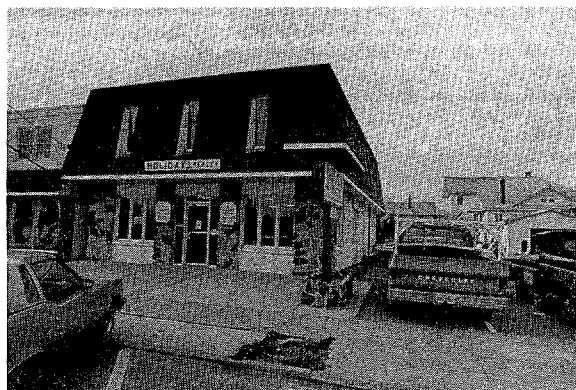
Photograph 11. Restaurant and gaso-
line service center, a form of
retail service area, Garden State
Parkway, Lacey Township, Ocean
County.



Photograph 12. Laundry, a form of
personal service, Avalon, Cape May
County.

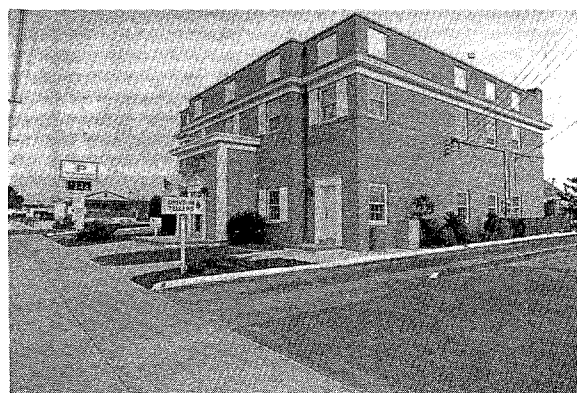


Photograph 13. Wholesale and distri-
bution, warehouses in Secaucus, Hud-
son County.

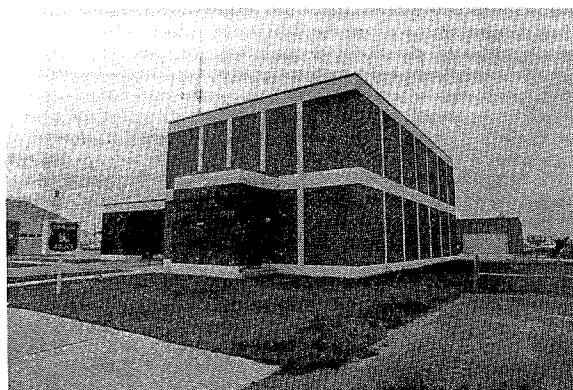


Photograph 14. Real estate office,
a form of professional facility,
Avalon, Cape May County.

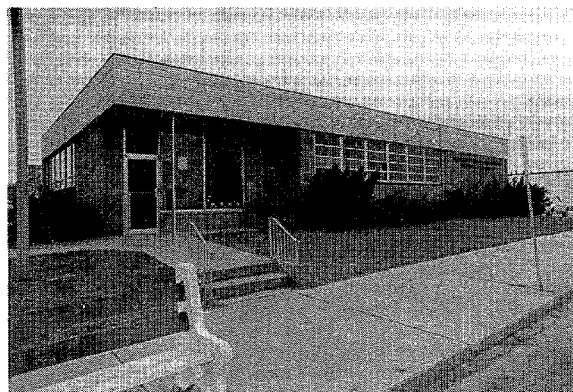
Photograph 15. Bank, a form of professional facility, Avalon, Cape May County.



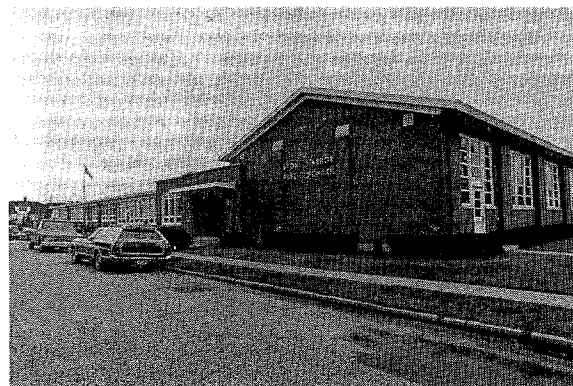
Photograph 16. Municipal building, a form of government institution, Avalon, Cape May County.

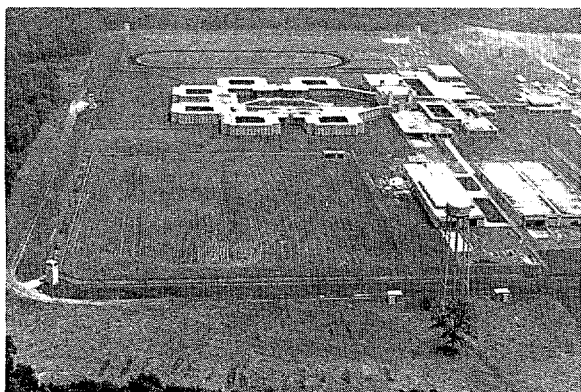


Photograph 17. Post office, a form of government institution, Avalon, Cape May County.

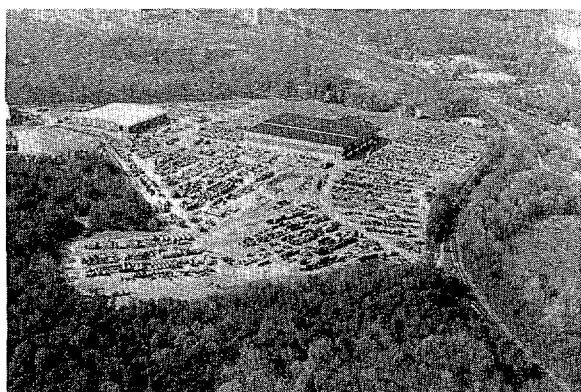


Photograph 18. Educational institution, Stone Harbor, Cape May County.

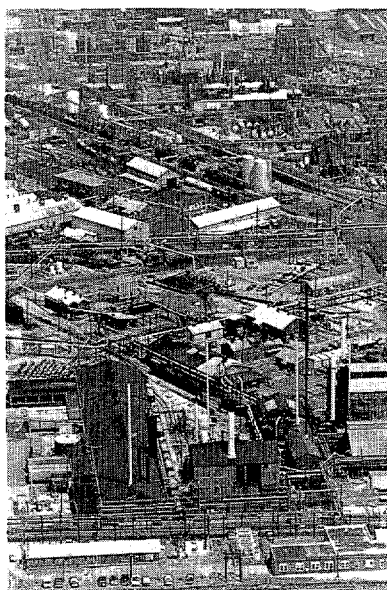




Photograph 19. Penal institution,
Leesburg.



Photograph 20. Fabricated metal
manufacturing industry, Bridgeport,
Burlington County. Representative of
many industrial uses and impacts.



Photograph 21. Chemical manufacturing,
Deepwater, Salem County. Representa-
tive of the chemical industry and its
associated impacts.

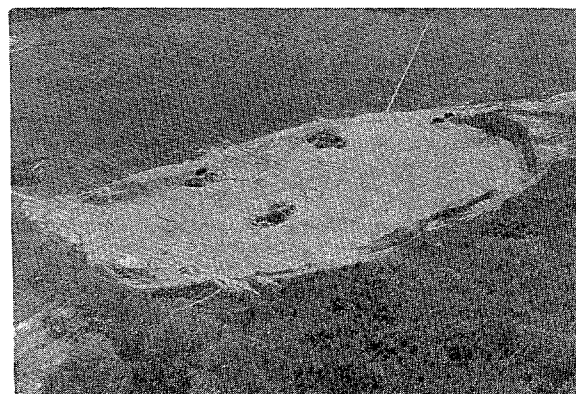
Photograph 22. Hard rock quarrying,
Snake (Laurel) Hill, Secaucus, Hudson
County.



Photograph 23. Unconsolidated sand
extraction from dry pit, Sewell, Glou-
cester County.



Photograph 24. Unconsolidated dry
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Gloucester County.

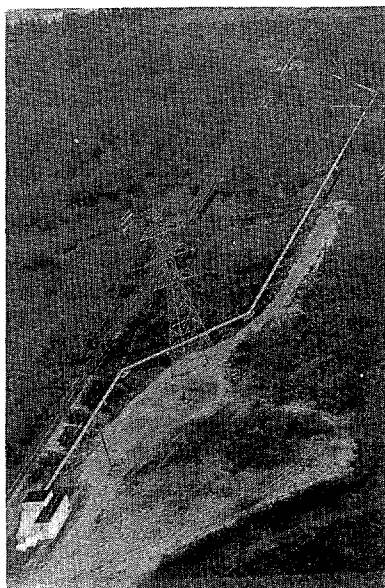


Photograph 25. Unconsolidated sand
extraction by hydraulic methods,
Atlantic County.





Photograph 26. Unconsolidated materials rehandling from sand extraction, Millville, Cumberland County.

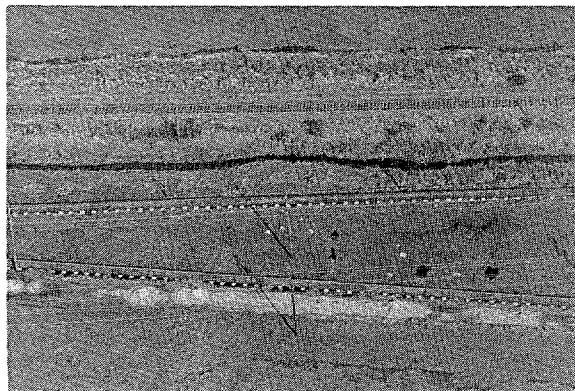


Photograph 27. Natural gas pipeline, Toms River, Ocean County.

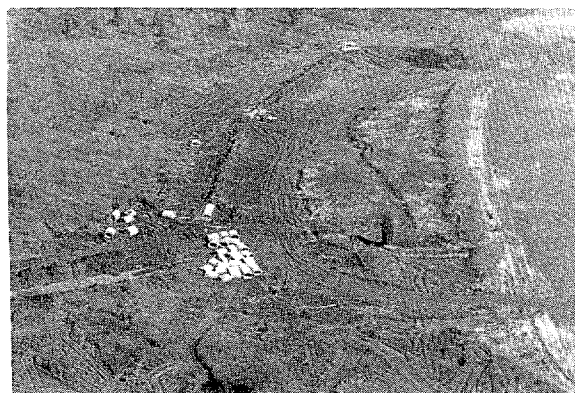


Photograph 28. Water supply pipeline to Atlantic City, Atlantic County.

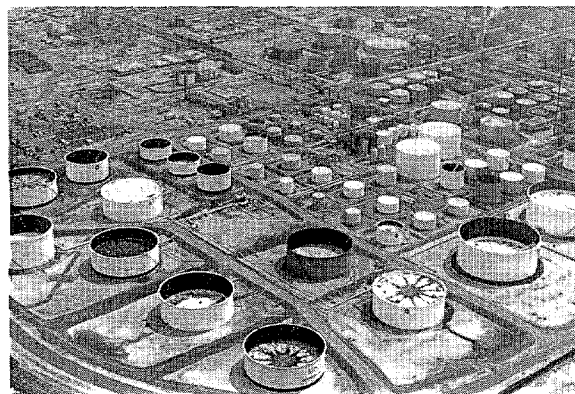
Photograph 29. Water supply pipelines to Atlantic City, Atlantic County.



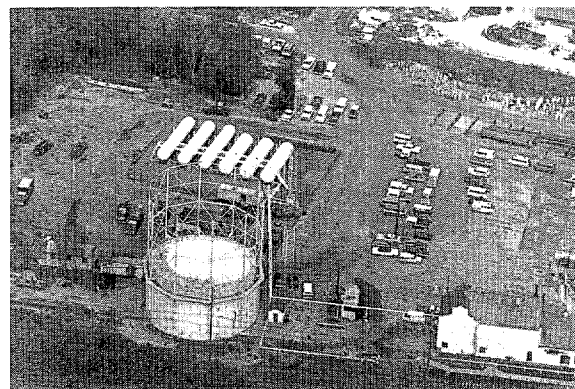
Photograph 30. Pipeline for storm sewer under construction, Mount Laurel Township, Burlington County.

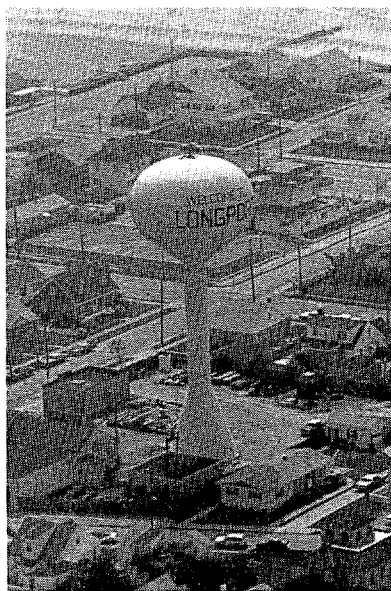


Photograph 31. Petroleum storage tanks, Paulsboro, Gloucester County.

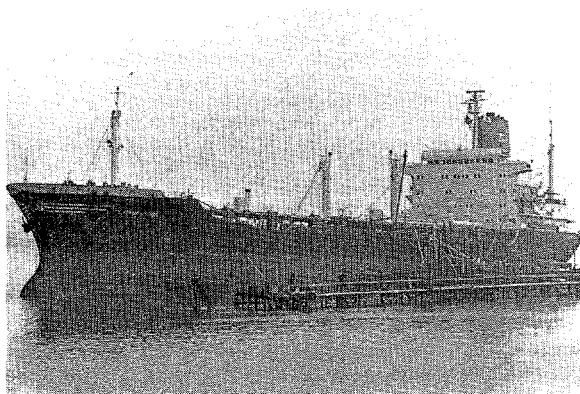


Photograph 32. Natural gas storage tanks, Toms River, Ocean County.

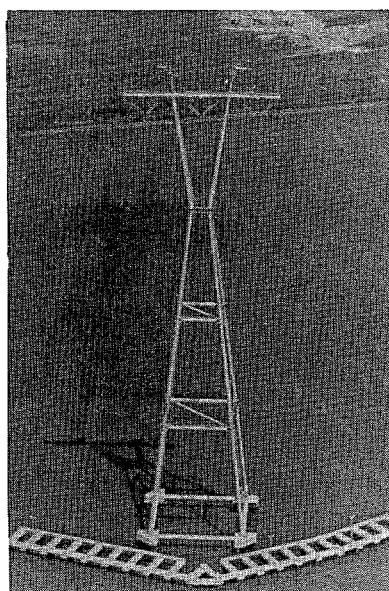




Photograph 33. Water supply storage tank, Longport, Atlantic County.

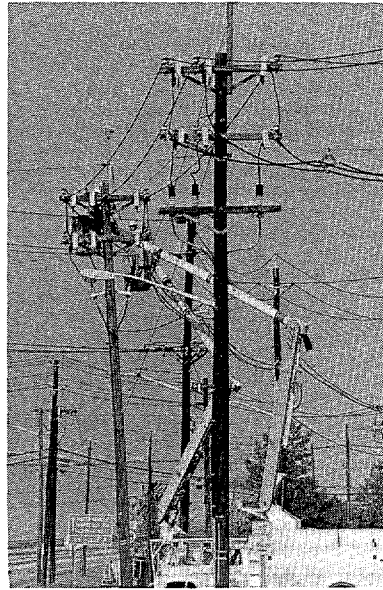


Photograph 34. Petroleum transfer facility on the Delaware River, Paulsboro, Gloucester County.

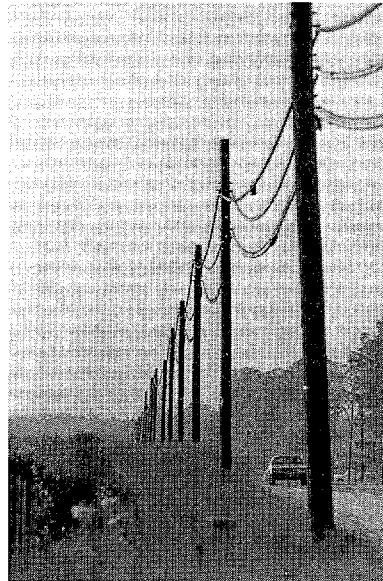


Photograph 35. Aerial electric transmission line over Delaware River, Harrisonville, Salem County.

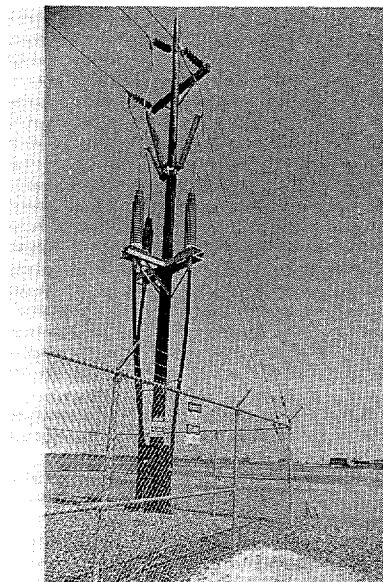
Photograph 36. Aerial electric transmission lines, Cherry Hill Township, Camden County.

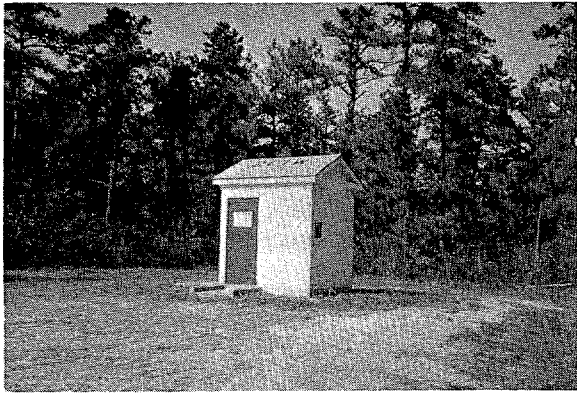


Photograph 37. Aerial telephone cables, Lumberton, Burlington County.



Photograph 38. Land terminus pole of buried, underwater electric transmission line, Atlantic City, Atlantic County.

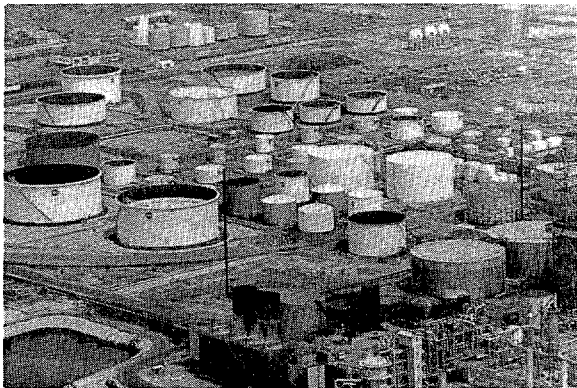




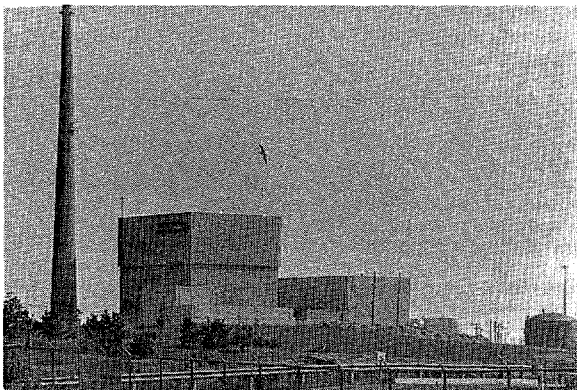
Photograph 39. Buried telephone cable, Bass River State Forest, Burlington County.



Photograph 40. Buried telephone cable right of way, Bass River State Forest, Burlington County.

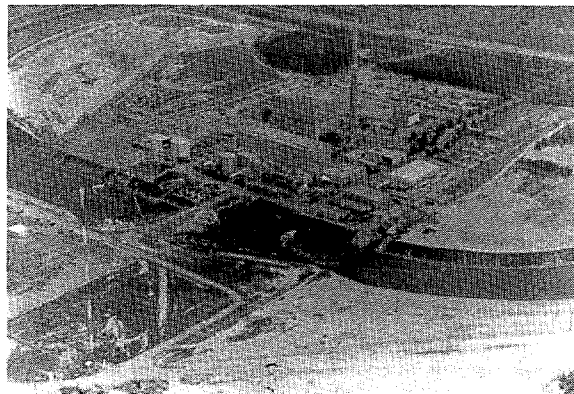


Photograph 41. Petroleum refining industry, Paulsboro, Gloucester County.

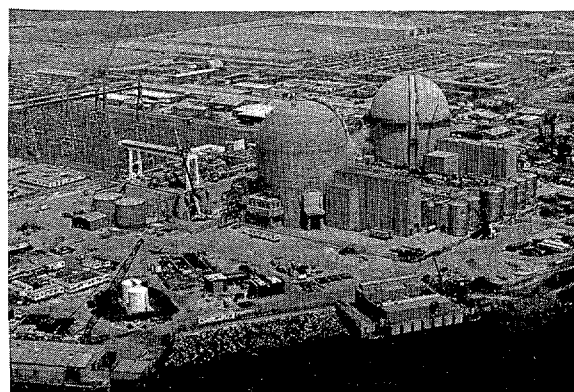


Photograph 42. Once-through, water-cooled, nuclear electric generating plant, Oyster Creek, Ocean County.

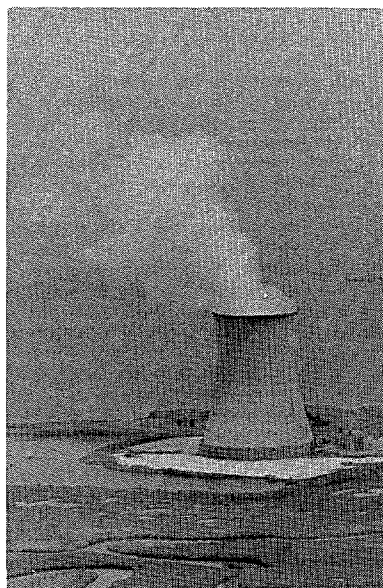
Photograph 43. Once-through, water-cooled, nuclear electric generating plant, Oyster Creek, Ocean County.

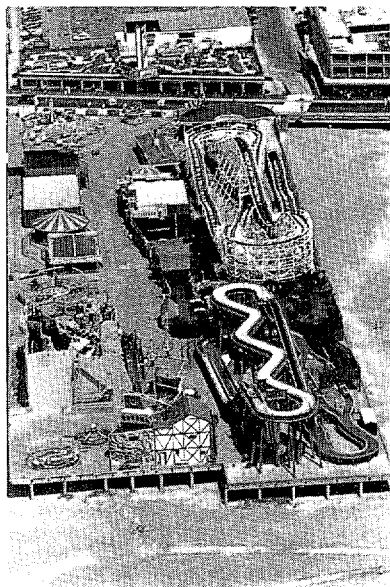


Photograph 44. Once-through, water-cooled, nuclear electric generating plant, Salem County.

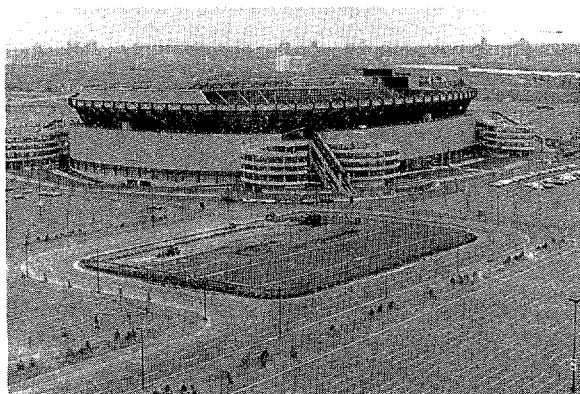


Photograph 45. Cooling tower for coal-fired electric generating plant, Beesleys Point, Cape May County.





Photograph 46. Large outdoor recreation facility, amusement park on pier, North Wildwood, Cape May County.

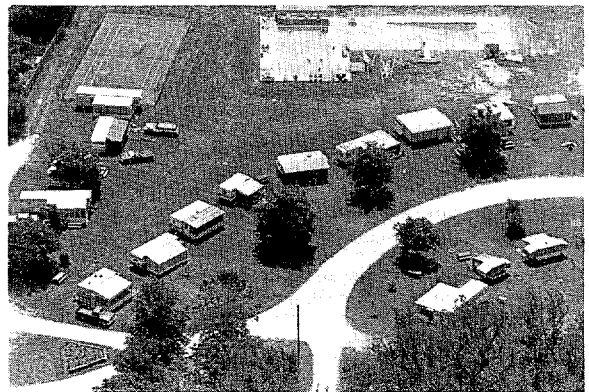


Photograph 47. Outdoor, large crowd gathering recreation facility, Giants Stadium, East Rutherford, Bergen County.

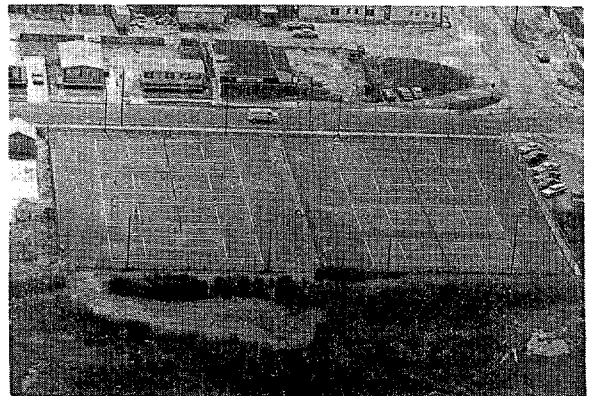


Photograph 48. Outdoor, large crowd gathering recreational use, ocean bathing beach, Atlantic City, Atlantic County.

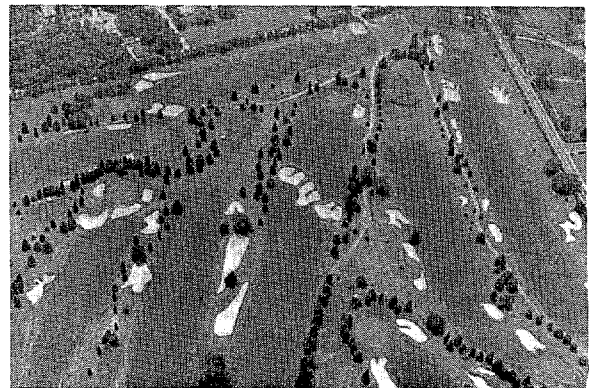
Photograph 49. Outdoor, small crowd gathering recreational facility, campground for mobile trailers, Middle Township, Cape May County.



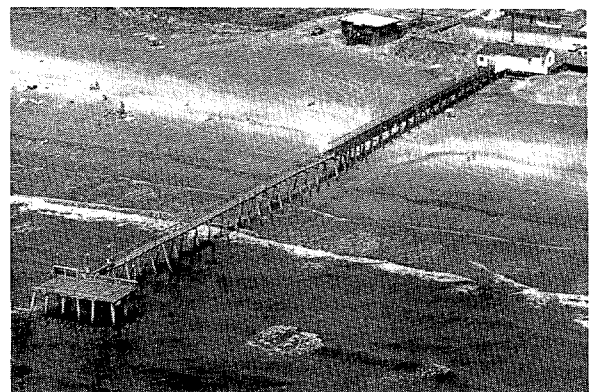
Photograph 50. Outdoor, small crowd gathering recreational facility, tennis courts, Sea Isle City, Cape May County.

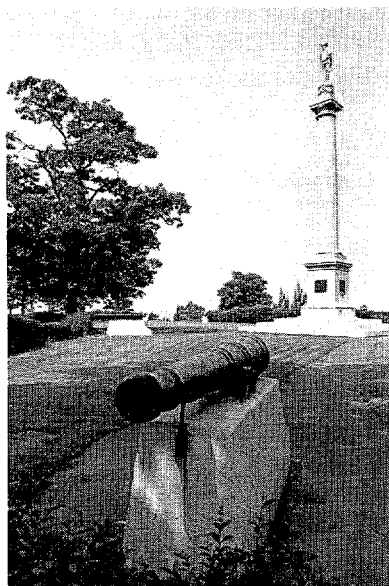


Photograph 51. Outdoor, small crowd gathering recreational facility, golf course, Absecon, Atlantic County.

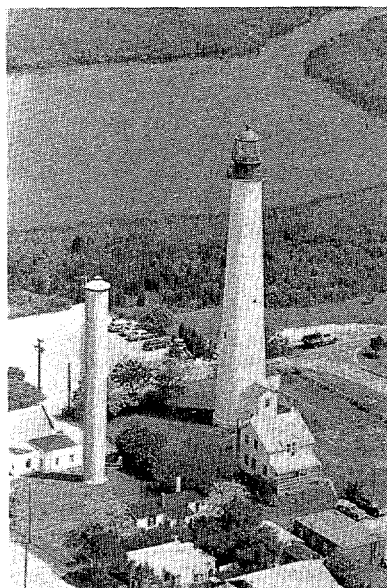


Photograph 52. Outdoor, small crowd gathering recreational facility, fishing pier, Avalon, Cape May County.





Photograph 53. Outdoor, small crowd gathering recreational facility, historic park, National Park, Gloucester County.

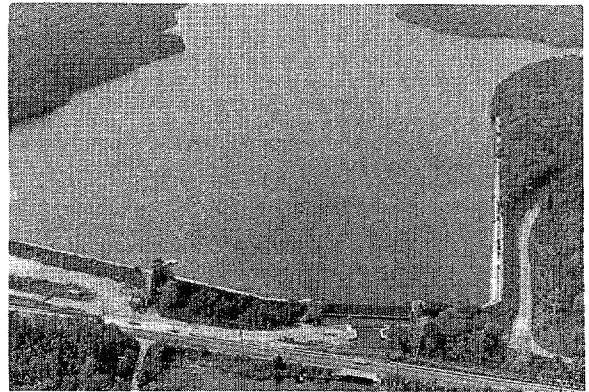


Photograph 54. Indoor, small crowd fathering facility, sightseeing center, Cape May Point Lighthouse.

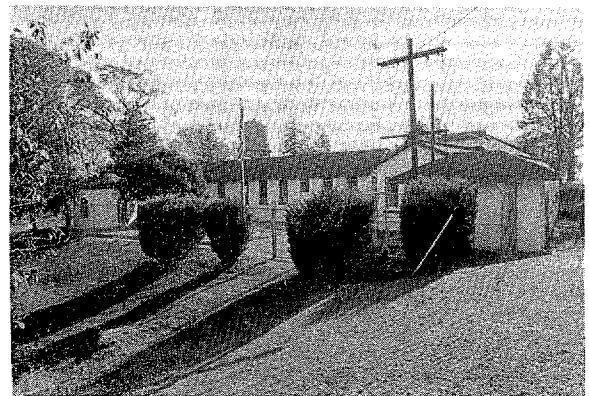


Photograph 55. Indoor, small crowd gathering recreational facility, Batasto, Wharton State Forest, Burlington County.

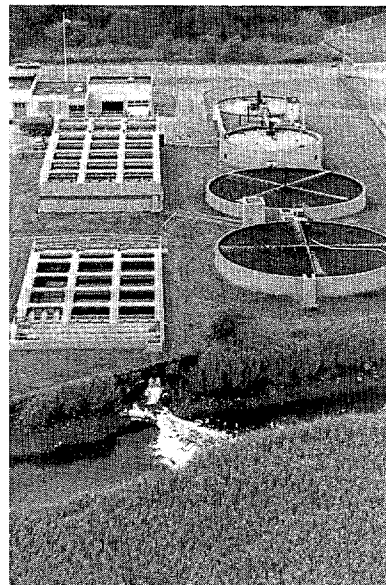
Photograph 56. A portion of a centralized water system, Atlantic City Reservoir, Galloway Township, Atlantic County.

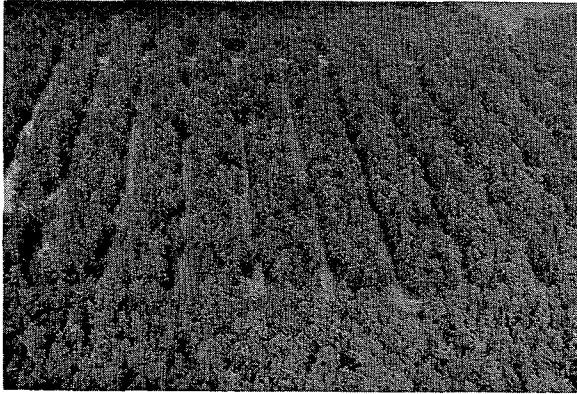


Photograph 57. Water treatment plant, a portion of centralized water system, Moorestown, Burlington County.

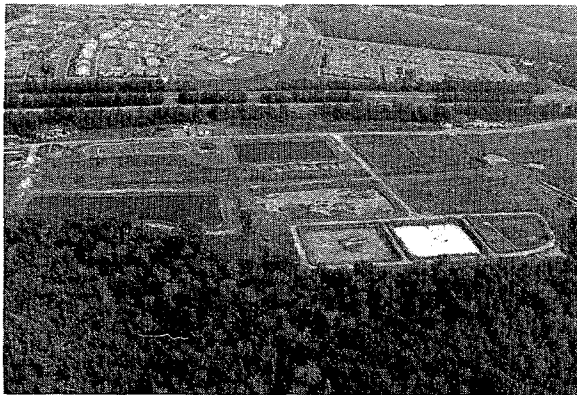


Photograph 58. Centralized sewage treatment system, Secaucus, Hudson County.





Photograph 59. Sewage spray-
irrigation field, a portion of a cen-
tralized sewage treatment facility,
Stockton State College, Atlantic
County.



Photograph 60. Sewage infiltration
bed, a portion of a centralized sewage
treatment facility, Winslow Crossing,
Camden County.



Photograph 61. Abandoned sludge in-
cinerator, Camden City, Camden County.

Photograph 62. Refuse landfill, Egg Harbor Township, Atlantic County.

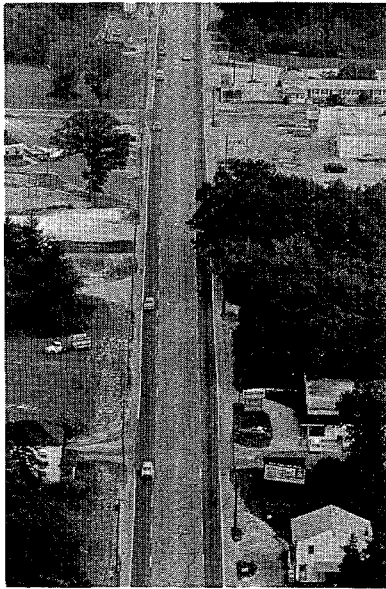


Photograph 63. Open water dredge spoil disposal area, Great Egg Harbor Inlet, Atlantic County.



Photograph 64. Expressway interchange for auto transportation, Atlantic City Expressway and Garden State Parkway, Atlantic County. Limited access roadways.





Photograph 65. Route 30, a four-lane collector road, Galloway Township, Atlantic County. Somewhat restricted access roadways.



Photograph 66. Route 563, a two-lane collector road, Bass River Township, Burlington County.

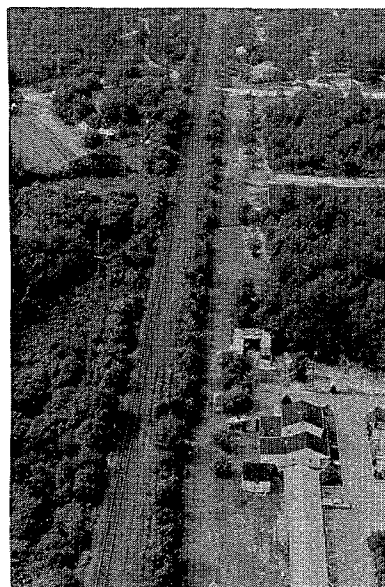


Photograph 67. Local roads, Cape May County. Unlimited access roadways.

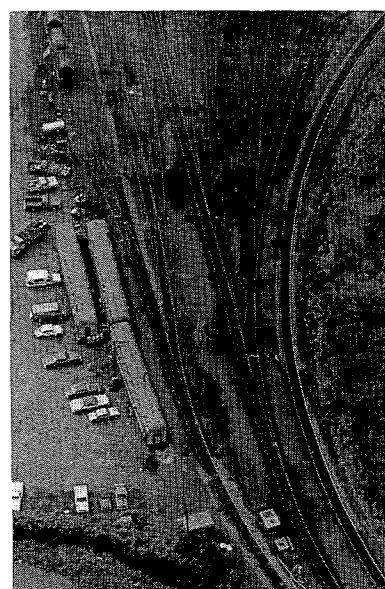
Photograph 68. Local road, rural Bass
River Township, Burlington County.

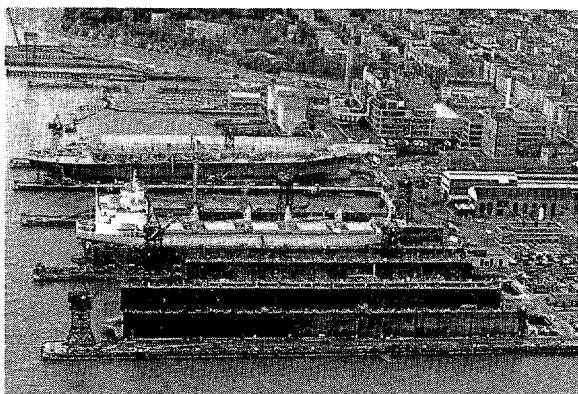


Photograph 69. Rail line, Pomona,
Galloway Township, Atlantic County.

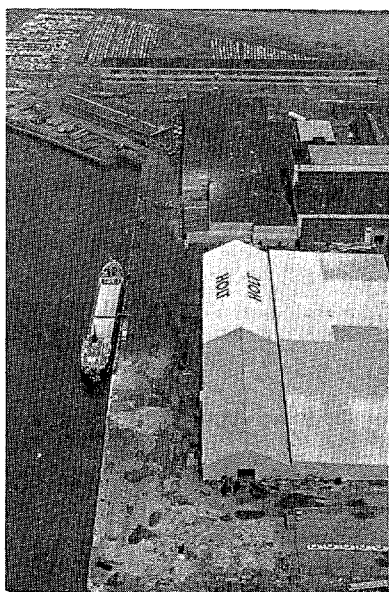


Photograph 70. Rail yard, Bay Head,
Ocean County.





Photograph 71. Shipyard docks, parts of a Port, Hoboken, Hudson County.

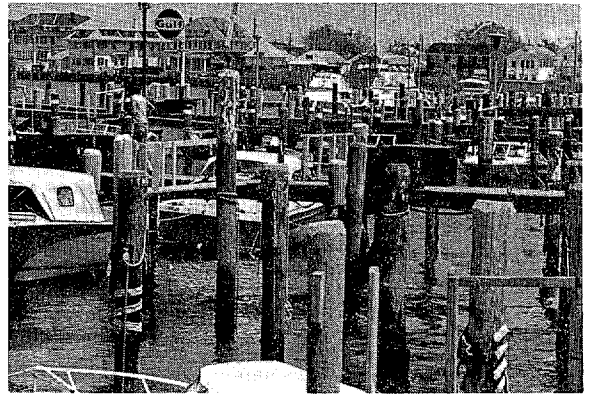


Photograph 72. Commercial freight wharf, part of a port along the Delaware River, Camden City, Camden County.

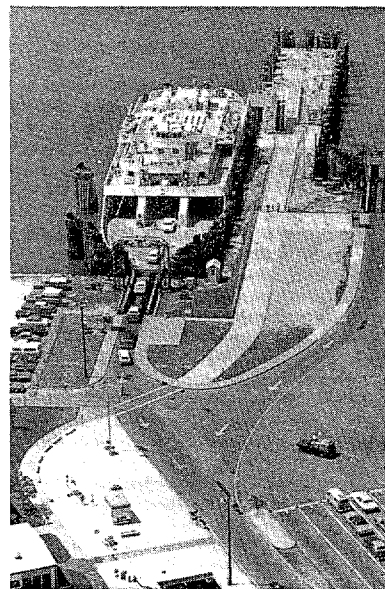


Photograph 73. Commercial marina, Barnegat Light, Ocean County. Serving large numbers of medium sized, privately owned watercraft.

Photograph 74. Commercial marina,
Ventnor, Atlantic County.



Photograph 75. Car ferry dock on
Delaware Bay, Cape May Point, Cape
May County. Dock serving one or
more small to medium sized watercraft.

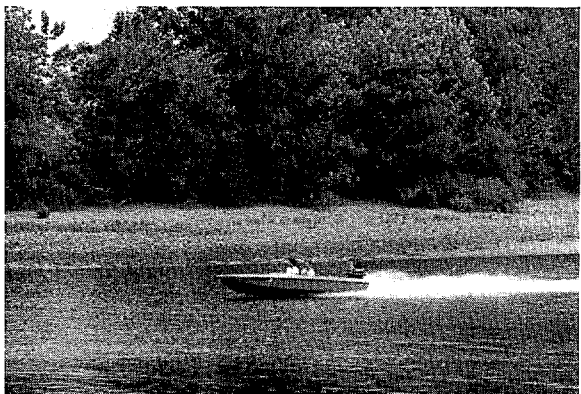


Photograph 76. Coast Guard dock on
the Delaware River, Camden City,
Camden County.





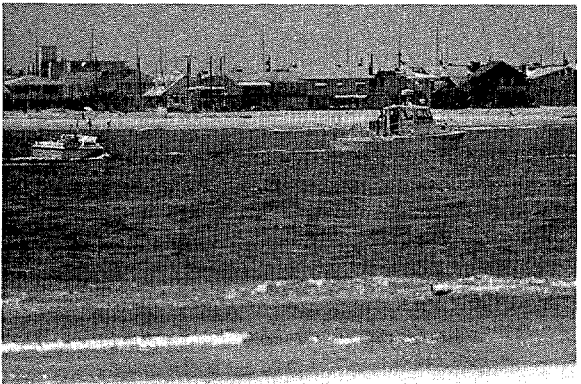
Photograph 77. Private docks along Nacote Creek, Atlantic County.



Photograph 78. Boating, a form of navigation, on the Delaware River, Burlington County. Navigation is the movement of watercraft and includes the dredging required to allow this movement.



Photograph 79. Navigation by oil tanker on the Delaware River, Salem County.



Photograph 80. Navigation, Absecon Inlet, Atlantic County.

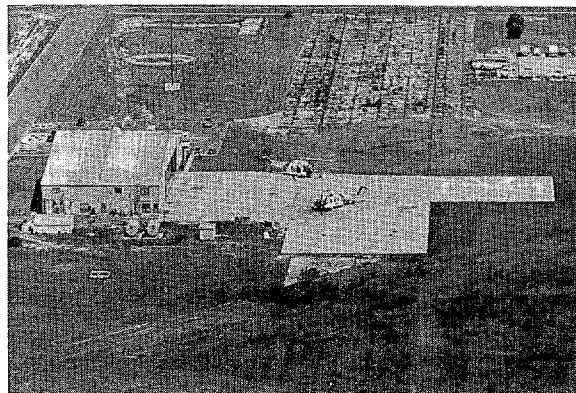
Photograph 81. Airport; general aviation terminal and hangar, Bader Field, Atlantic County.



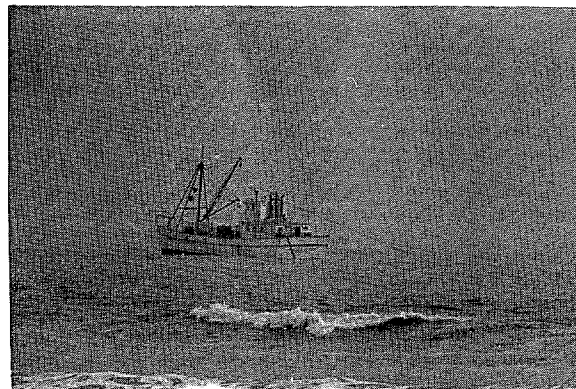
Photograph 82. Small landing field, Cross Keys, Gloucester County.



Photograph 83. Coast Guard helicopter landing pad, a form of small landing field, Cape May City, Cape May County.



Photograph 84. Commercial shell-fishing, dredging for surf clams off Avalon, Cape May County.



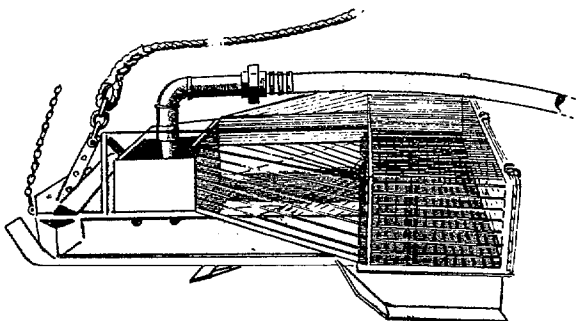


Illustration 85. Hydraulic or jet dredge for clams, a form of shellfish dredging (adapted from Gusey, 1976).

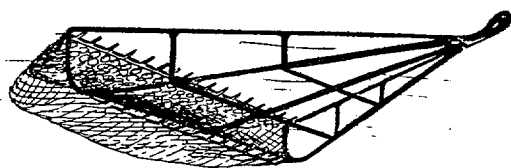


Illustration 86. Crab dredge used in commercial shellfishing (adapted from Gusey, 1976).

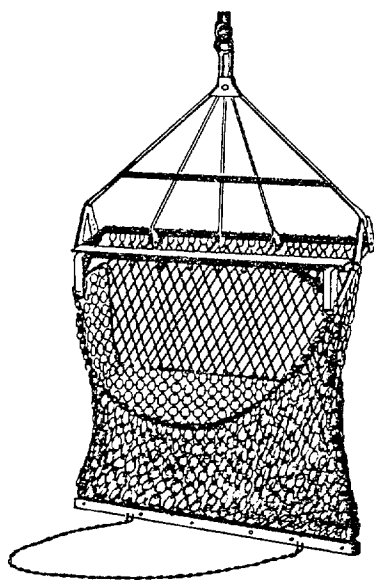


Illustration 87. Scallop dredge used in commercial shellfishing (adapted from Gusey, 1976).

Illustration 88. Fish trap, a form of commercial fishing (adapted from Kendall, 1977). External and cut-away views.

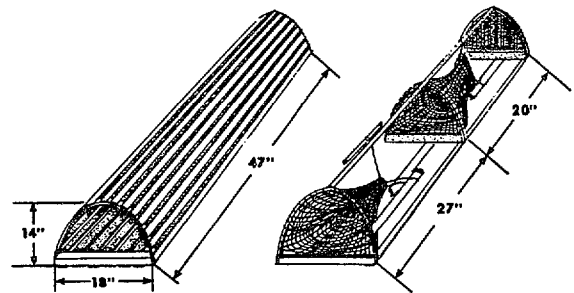


Illustration 89. Gill netting, a form of commercial fishing (adapted from Wilk, 1977).

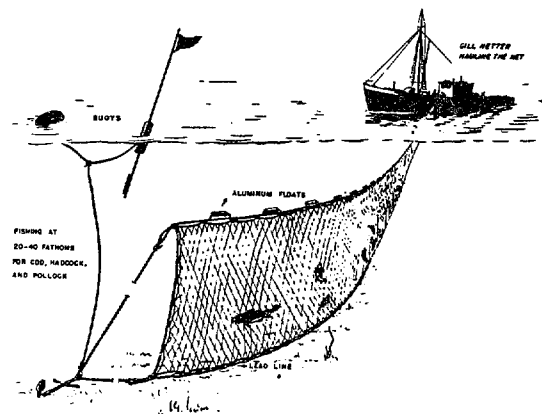
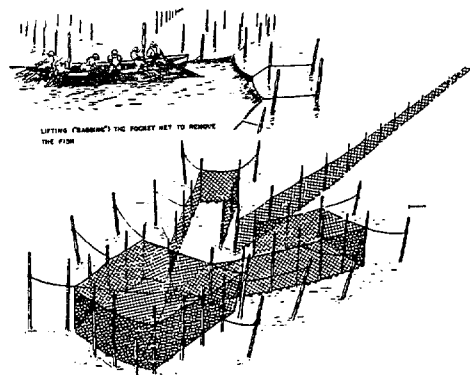


Illustration 90. Commercial pound netting for finfish (adapted from Wilk, 1977).



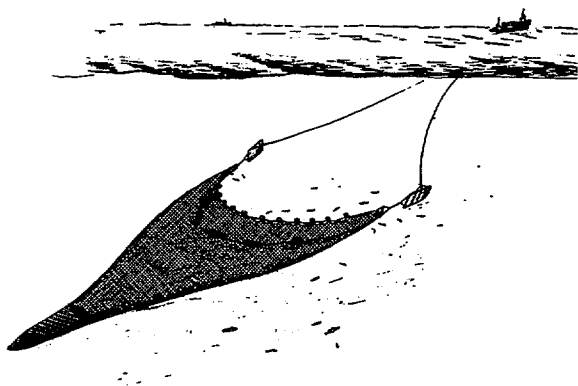


Illustration 91. Otter trawling, a form of commercial fishing (adapted from Wilk, 1977).

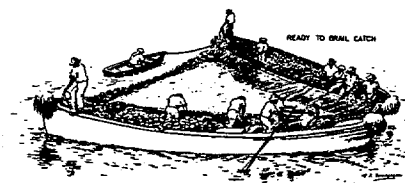
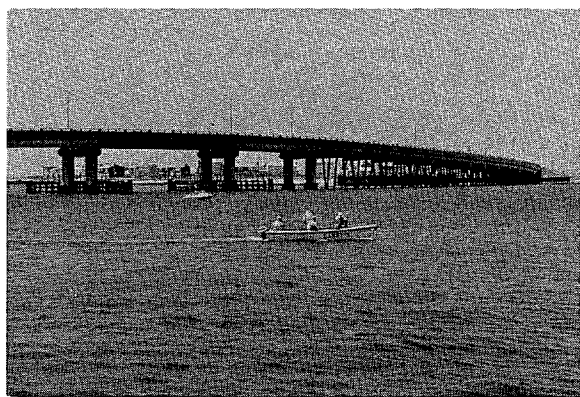


Illustration 92. Purse seining, a form of commercial fishing (adapted from Wilk, 1977).

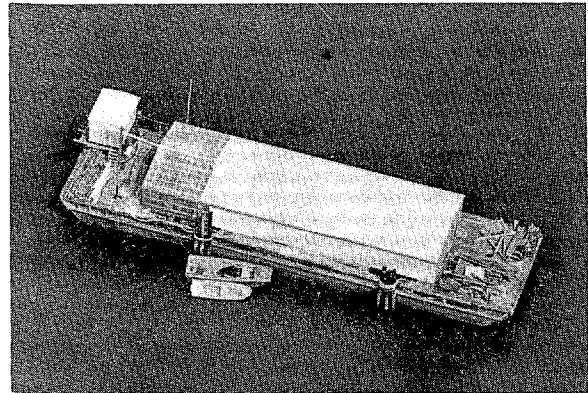


Photograph 93. Recreational fishing from a boat, Longport, Beach Thorofare, Atlantic County.

Photograph 94. Recreational fishing from shore, Barnegat Light, Ocean County.



Photograph 95. Open-system aquaculture, Atlantic County.



Photograph 96. Forestry; logging of a white cedar swamp, Wharton State Forest, Burlington County.



Photograph 97. Row crops, Middle Township, Cape May County.

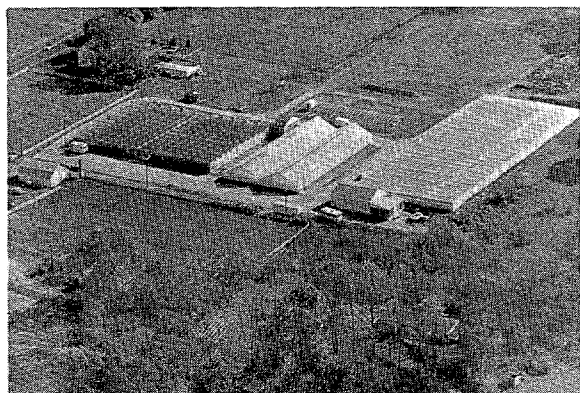




Photograph 98. Blueberry fields, a form of row crop agriculture, Hogwallow, Burlington County.



Photograph 99. Salt hay agriculture, Stipson Island, Cape May County.

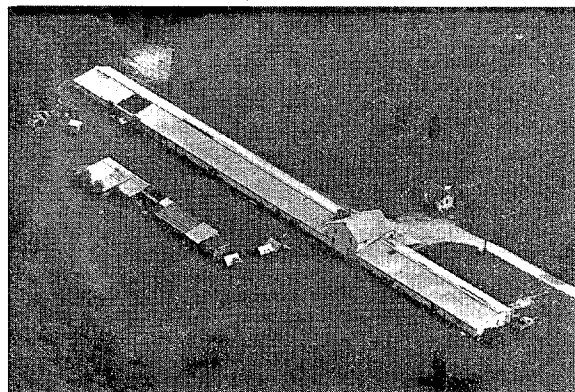


Photograph 100. Greenhouses, a form of nursery agriculture, Swedesboro, Gloucester County.

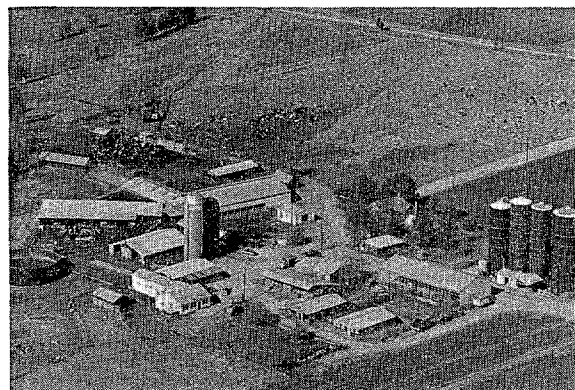


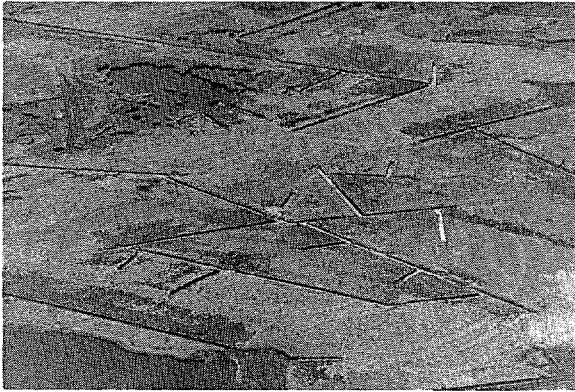
Photograph 101. Fruit orchard, Willingboro, Burlington County.

Photograph 102. Poultry house, a
form of lot rearing of livestock,
Lakewood, Ocean County.



Photograph 103. Range rearing of
livestock, Mantua Township,
Gloucester County.

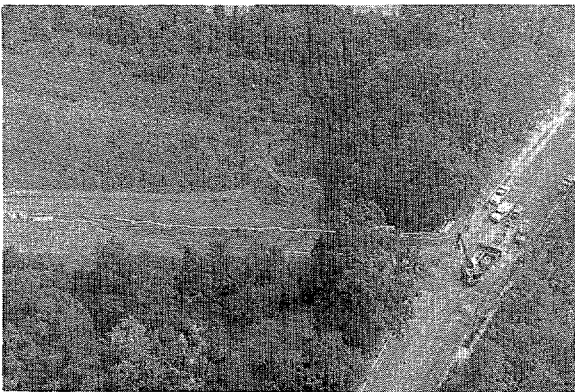




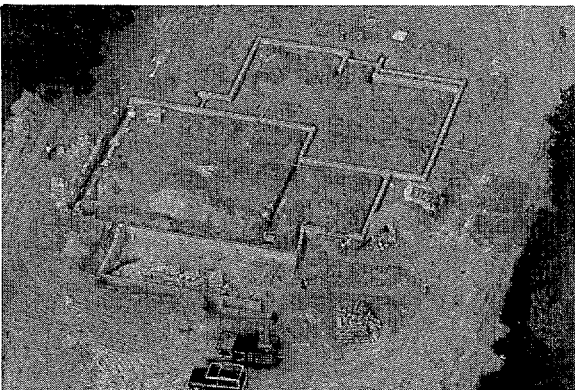
Photograph 104. Mosquito control ditching, Delaware Bay, Cumberland County.



Photograph 105. Compaction of landfill area due to traffic, Ocean Gate, Ocean County.



Photograph 106. Woody clearing for interceptor sewer under construction, Brick Township, Ocean County.

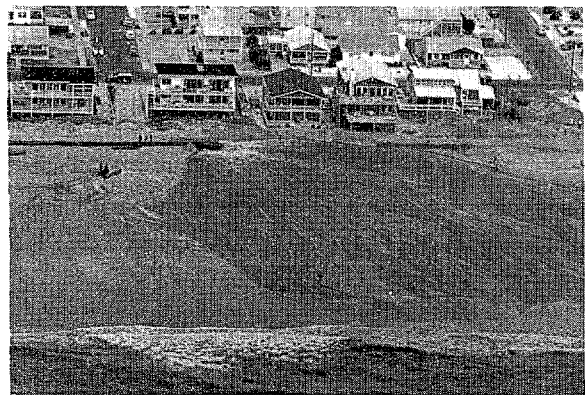


Photograph 107. Site cleared of herbaceous vegetation for housing construction near Williamstown, Gloucester County.

Photograph 108. Diking for cranberry bog, Oswego River, Burlington County.



Photograph 109. Unconsolidated filling with dredge spoils, Sea Isle City, Cape May County.

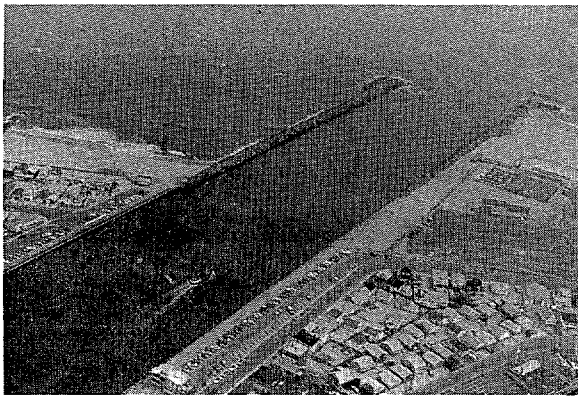


Photograph 110. Unconsolidated filling of a wetland for a housing development, near Townsends Inlet, Cape May County.

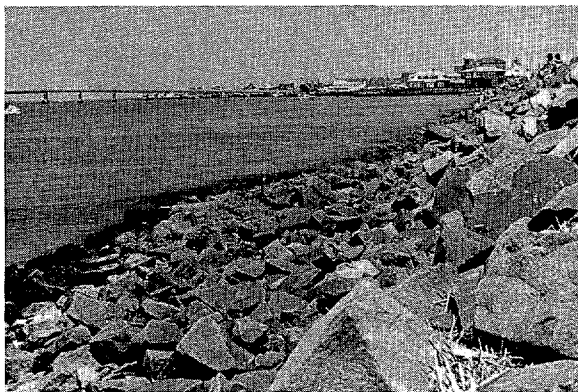




Photograph 111. Stone groin, a form of consolidated filling, Townsends Inlet, Avalon, Cape May County.



Photograph 112. Jetties formed by consolidated filling, Townsends Inlet, at the border of Monmouth and Ocean Counties.



Photograph 113. Riprap placed by consolidated filling, Longport, Atlantic County.

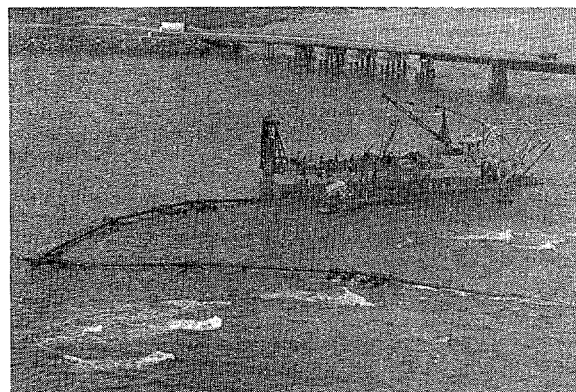


Photograph 114. Excavating, Mount Laurel Township, Burlington County.

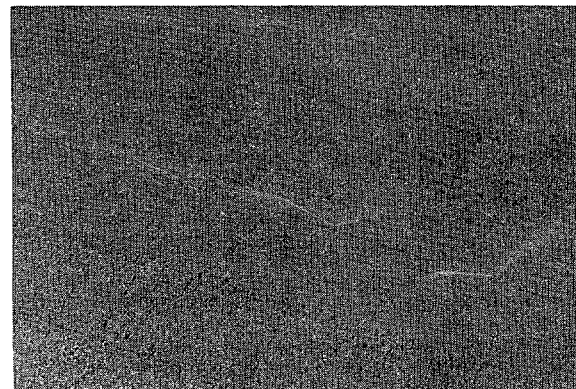
Photograph 115. Impervious surfacing
for a school playground, Margate City,
Atlantic County.



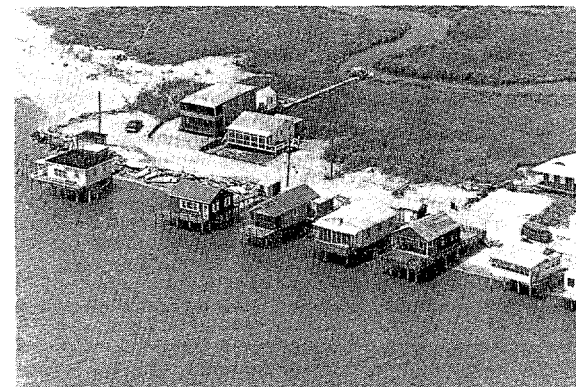
Photograph 116. Dredging of Townsends
Inlet, Cape May County.

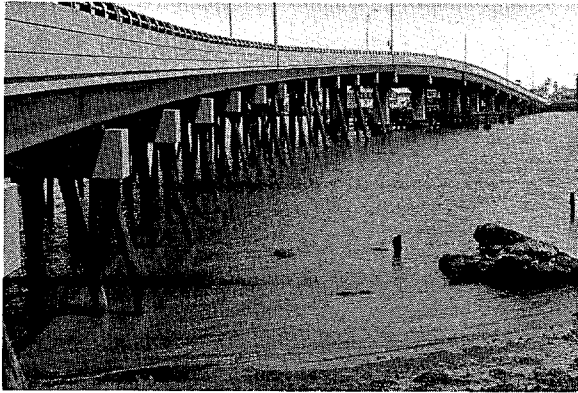


Photograph 117. Spray irrigation of
cropland, Egg Harbor City, Atlantic
County.

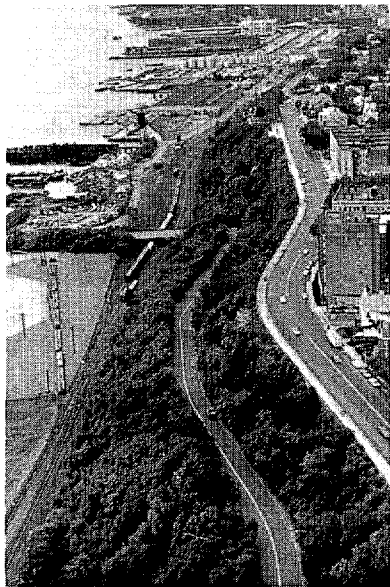


Photograph 118. Structural support
for housing along Delaware Bay,
Gandys Beach, Gloucester County.

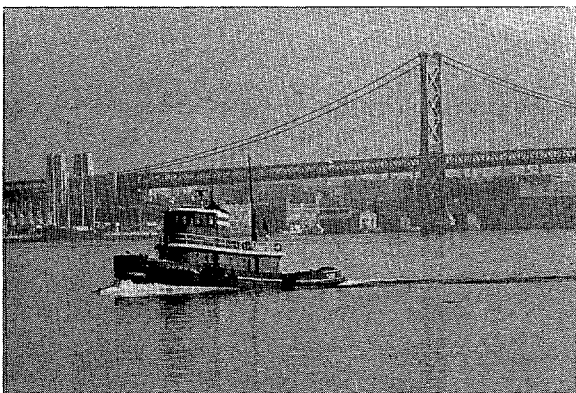




Photograph 119. Structural support for highway bridge over beach thoro-fare, Longport, Atlantic County.

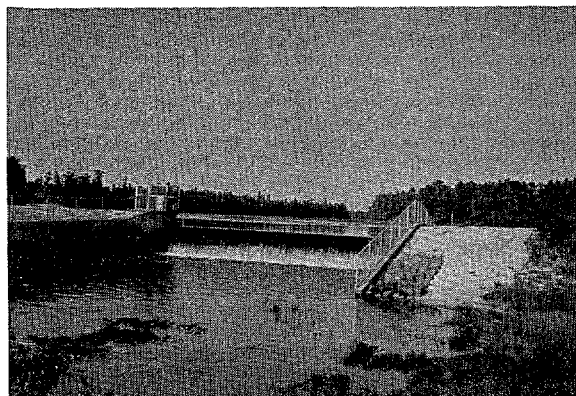


Photograph 120. Vehicular traffic both by auto and train along the Hudson Palisades, Hudson County.

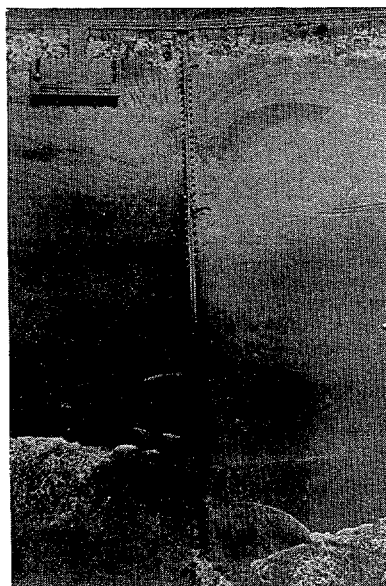


Photograph 121. Vehicular traffic by tugboat on the Delaware River, Camden County.

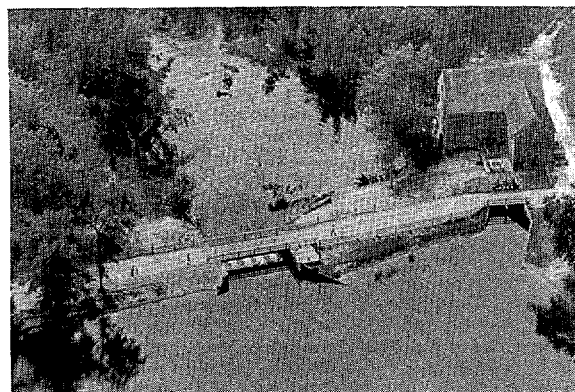
Photograph 122. Water transfer/diversion by damming for recreation, Oswego River, Burlington County.

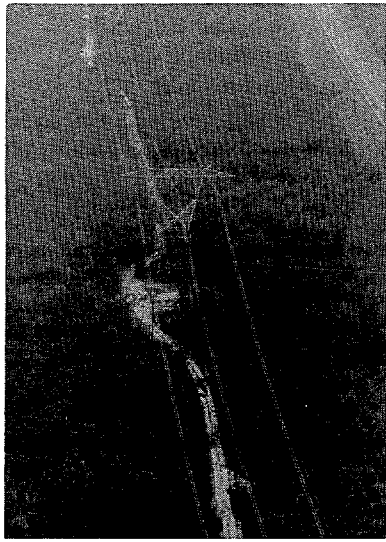


Photograph 123. Water transfer/diversion by a wooden groin, Sea Isle City, Cape May County.

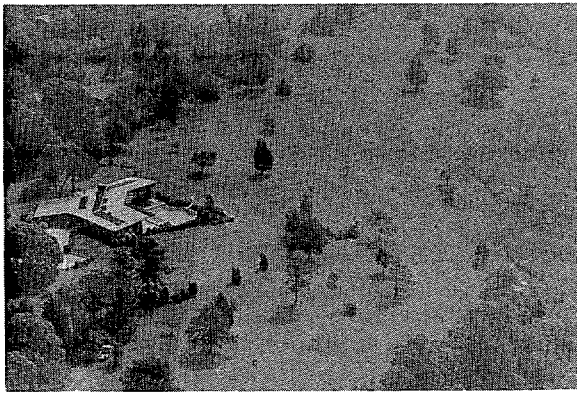


Photograph 124. Inundation upstream from dam, Wharton State Forest, Burlington County.

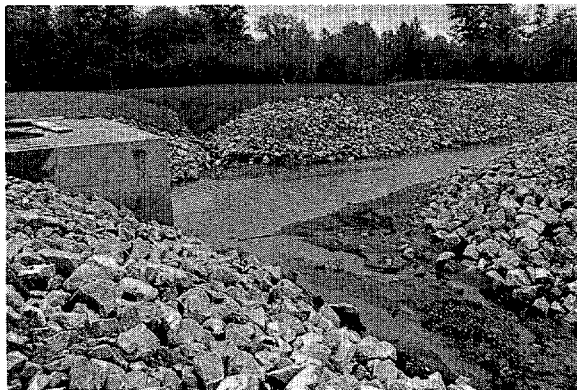




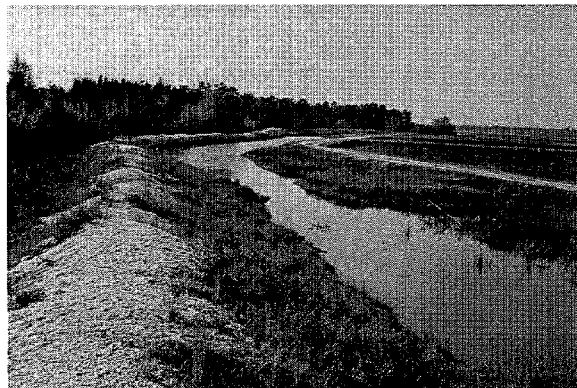
Photograph 125. Right-of-way management, Winslow Township, Camden County.



Photograph 126. Ornamental landscape management in association with housing, Ocean Heights, Atlantic County.

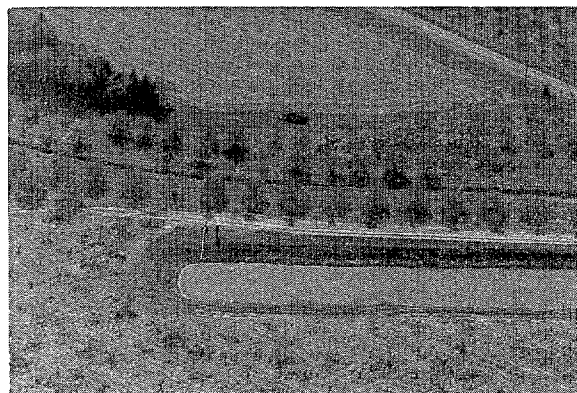


Photograph 127. Drainage from a construction area, Lumberton, Burlington County.



Photograph 128. Surface water demand through a water supply ditch for a cranberry bog, Oswego, Burlington County.

Photograph 129. Irrigation water is withdrawn from this excavated basin and constitutes a surface water demand, Washington Township, Gloucester County.

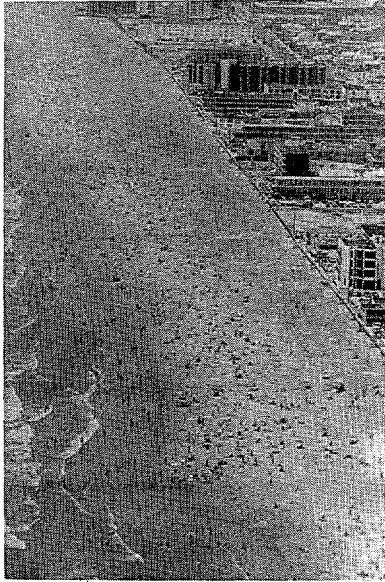


Photograph 130. Culverting of a stream under a road, Mullica River, Burlington County.

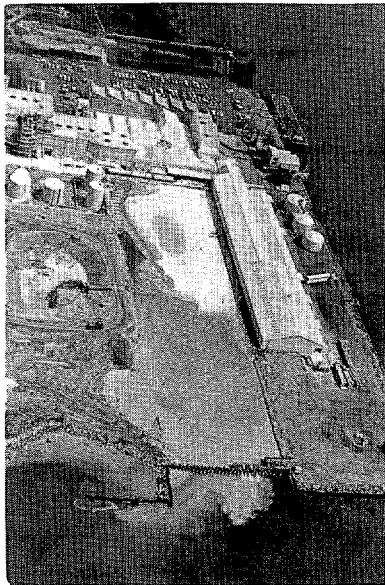


Photograph 131. Channelization of a stream, Oldmans Township, Gloucester County.

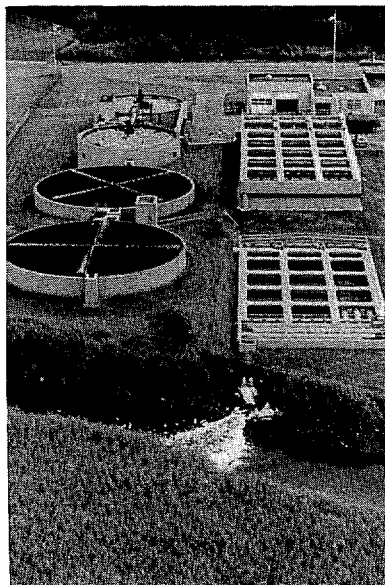




Photograph 132. Pedestrian traffic
on a bathing beach, Wildwood
Gables, Cape May County.



Photograph 133. Industrial treatment
lagoon, possibly used for disposal of
heavy metals in liquid wastes,
Gloucester City, Camden County.



Photograph 134. Sewage treatment
plant with outfall pipe in foreground
disposing of nutrients in liquid waste
streams, Secaucus, Hudson County.

Photograph 135. Thermal effluent being disposed of into channel on right foreground of once through cooled electric generating plant, Oyster Creek, Ocean County.

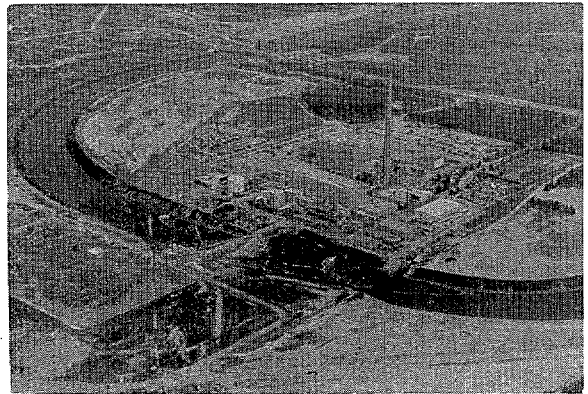
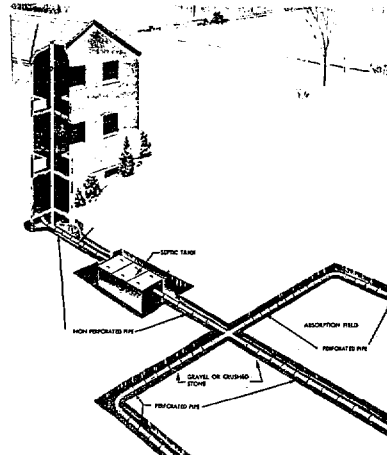
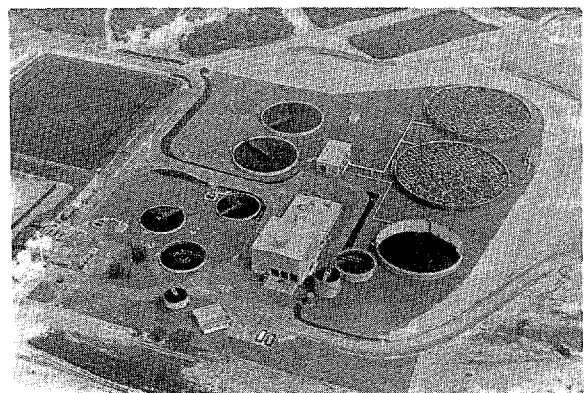
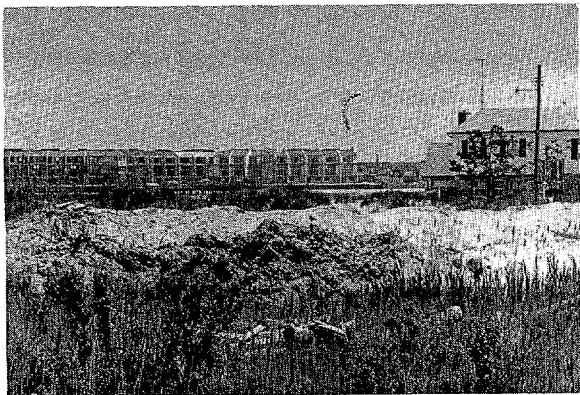


Illustration 136. Organic liquid waste disposal by subsurface septic tank dispersal bed (adapted from Environmental Control Administration, 1969. Manual of septic-tank practice, US Department of Health, Education, and Welfare, Public Health Service, publication 526, 92 p.).

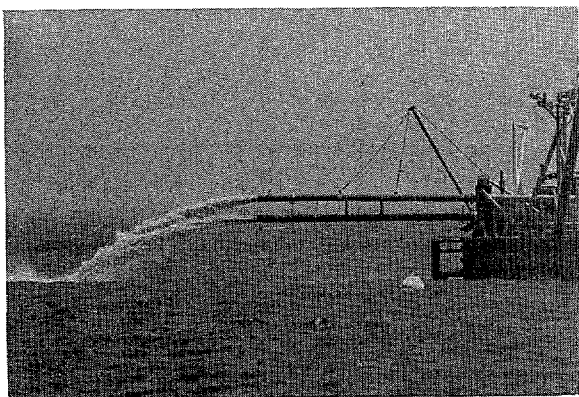


Photograph 137. Industrial waste-water treatment plant where hazardous solid wastes may be treated prior to disposal, Toms River, Ocean County.

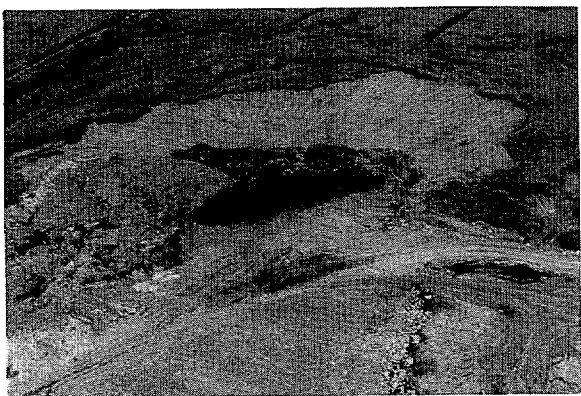




Photograph 138. Dredge spoil piles,
a form of unconsolidated non-
hazardous solid waste disposal,
Longport, Atlantic County.

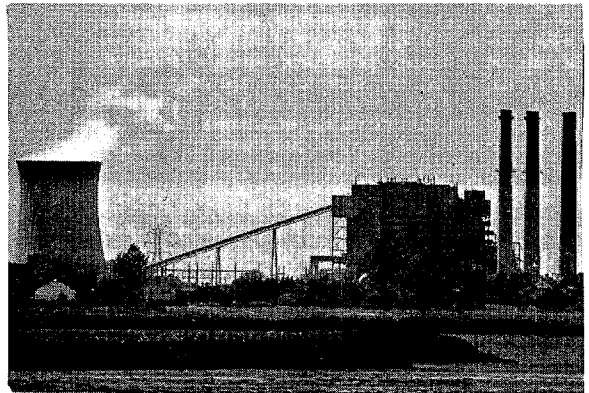


Photograph 139. Overboard dumping
of dredge spoils, a form of uncon-
solidated solid waste disposal,
South Seaside Park, Ocean County.



Photograph 140. Solid waste land-
fill for sludge near Secaucus,
Hudson County.

Photograph 141. Air waste disposal of particulates, electric generating plant at Beesley's Point, Cape May County.



Photograph 142. Air waste disposal of gaseous wastes, from electric generation station, Pennsville, Salem County.



Photograph 143. Nuclear-fueled electric generating plant with a hazardous operational impacting activity because of its fuel and wastes being radioactive, Salem County.

